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Nomadic Firms, Market Change and Infrastructure

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Research Memorandum 1998-26



NOMADIC FIRMS, MARKET CHANGE AND INFRASTRUCTURE

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Abstract:

Recent location patterns of modern firms appear to exhibit high mobility patterns with a tendency towards footlooseness. The spatial-economic dynamics - sometimes across the border - of firms is encapsulated in the term 'nomadic firms'.

This paper addresses the issue of nomadic behaviour of firms against the background of globalisation trends. After a critical discussion of globalisation phenomena and a review of the literature on nomadic entrepreneurial behaviour, the paper sets out to formulate a series of relevant hypotheses of spatial relocation behaviour of international firms in a globalizing network economy.

The analytical framework is tested by means of interviews among actual or potential nomadic firms, in both the Netherlands and abroad. Infrastructure quality and geographical accessibility appear to play an important role, but also opportunity seeking behaviour has a prominent place in nomadic behaviour.

1. Setting the Scene

The past decade has witnessed an avalanche of changes in industrial organisation. The face and position of the modern industry has drastically changed. Entrepreneurial linkages have since the 1980's increasingly assumed the form of internationally (or interregionally) operating industrial networks (see von Raesfeld Meyer 1997). The drive towards a network economy has exerted a profound impact on the volume and structure of international trade (containerisation, outsourcing, back to core business etc.). In addition to shifts in the internal-external network configurations of modern firms, we also observe that the role of transaction costs for intermediate deliveries and intra-firm decision-making is gaining much more importance (see Williamson 1975).

In principle, the economic organisation of modern industries can be characterized by three alternative arche-types, viz. **market**, **hierarchy** and **networks** (see Nijkamp and Vermond 1996). A market configuration takes for granted that a firm buys its necessary inputs in a competitive way from other producers as intermediate goods on the market, thus incurring high risks and transaction costs of ad hoc contracts. A hierarchy is an organisational structure where (part of) the industrial production is carried out under the control or inside the own corporation. And finally, a network is an organized industrial structure characterized by exchange relations between actors based on business interactions and mutual linkages (cf. Hakansson 1987).

Network theory and analysis has become a fashionable research topic in the spatial sciences. Networks are essentially an intermediate form between the market and the hierarchical industrial structure (see Davidson 1995). The benefits of a network originate from synergy as a result of economic complementarities of capacities of firms and their interaction activities. Efficiency is then enhanced by a combination of both competition and cooperation inside the network, supported by high quality communication potentials and regular interactions among interdependent partners (see also Kamann 1993). Thorelli (1986) and Hakansson (1987) emphasize in particular the long-lasting structural effects of a network, even though the individual firms' position in a network may change; this position is a market asset built up by investments in manpower, time and scarce financial means (see also Hinterhuber and Levin 1994). It should thus be emphasized that networks may exhibit different forms: vertical, horizontal, diagonal and internal, depending on the firm's internal organisation and competence as well as on the external market conditions.

The drive towards a network economy has been accompanied by a drastic change in the spatial-economic position of cities, regions and nations all over the world. There has been a complex and turbulent movement induced by indigenous growth and spatial connectivity. Structural change and differential dynamics (a simultaneous occurrence of slow and fast motion) have become a major feature of economies at all levels, where stability is increasingly substituted for transformation. After the era of the industrial Revolution in the second part of the last century which was marked by new ways of organizing production and

transport on the basis of new technological innovations favouring last-scale production, we observe in the second part of this century a new phase in the history of our developed world, viz. a Network Revolution marked by interconnected modes of production and transport and communication processes favouring neo-Fordist types of production (see Lagendijk 1993). As a consequence, we observe drastic changes in spatial-economic, sectoral and organizational respect of modern industries.

Fluidity and mobility have become the landmark of modern industries in a Schumpeterian era, where innovation and economic transformation are the characteristics of competitive opportunity seekers. As a result, research in industrial dynamics has gained much popularity in the past decade.

Especially in a European context this industrial transformation process has a pronounced meaning, as the European unification process and the opening up of Central- and Eastern-Europe has shaped the conditions for a mobile network economy. A free exchange of persons, commodities and capital has far reaching implications for intra-European trade and transport. Recent policy documents show that transport in Europe may be looked at from three partly complementary, partly competing policy angles: the need for competitive efficiency, the need for geographical accessibility for all regions in Europe, and the need for an environmentally sustainable development (see Reggiani et al. 1997)

Competitive efficiency is at the centre of current European transport policy, where massive investments in Trans European Networks and in missing links serve to support the goal of economic integration. But also at local, metropolitan and regional scales formidable investment efforts are foreseen in order for main players to survive in a competitive world market based on global networks. Efficiently operating transport networks in the former segmented European space-economy are critical success factors for the competitive edge of Europe.

There is also a major concern on geographical accessibility of less central regions in Europe. The low density of transport needs in many rural and peripheral areas has been a permanent source of concern for public authorities, from the viewpoint of both the service quality offered by public transport operators and the objectives set for regional development. A look at the historical development of European infrastructure networks (road, rail, air, waterways) makes immediately clear that the most important links were first constructed between major centres of economic activity. The connections with rural and peripheral areas were in all cases delayed. This is a clear case where efficiency motives and equity motives are in conflict with one another. In the emerging European welfare states however, the rights of the rural and peripheral areas have been recognized as legitimate claims, even though the economic feasibility of such 'extra-central' connections was often clearly negative. But the equity argument - often reinforced by the 'generative' argument (i.e. an infrastructure - once constructed - will attract new activities) - has played a major role in the political debate on subsidies for transport for the 'mobility deprived' in remote areas.

And finally, there is a more recent major policy concern on the question of

whether transport will be devastating for environmentally sustainable development. Our mobile society fulfils many socio-economic needs, but calls at the same time for social and political change in order to attain sustainable mobility. Both passenger and goods transport have increased rapidly in the past years, and for the time being there is no reason to expect a change in this trend. Some European scenarios even forecast a doubling of transport in one generation. This development provokes intriguing questions on the external (social) costs of transport, such as congestion, pollution and safety issues. Apart from local problems such as congestion or noise, the global environmental implications of transport are increasingly becoming a source of major concern (see Nijkamp et al. 1998).

After the above sketch of the scene in which industrial dynamics and transport policy are increasingly marked by network configurations of a material and immaterial nature, the question arises: what is the likely mobility pattern of modern industries in the era of innovation, globalisation and networking? Will fluidity and mobility become a dominant feature? The present paper will address the issue of spatial relocations of firms from the viewpoint of internationalisation of business life. The aim of this paper is to trace and investigate the origins of nomadic location behaviour of firms and to analyze the possible implications of this nomadic tendency for Dutch - and European - infrastructure policy. In particular, this research concentrates on two policy concerns:

- i) how can nomadic companies be persuaded to locate and stay in the Netherlands by means of an improvement of the supply of infrastructure facilities;
- (ii) what consequences for infrastructure use (e.g. transport flows) could occur if those nomadic companies choose to leave the country in large numbers?

Important in the relation between nomadic relocation and infrastructure policy is the extent to which nomadic companies - often regarded as the most critical, foot-loose, internationally operating, and cost-sensitive companies - offer (indirect) signals to policy-makers that they are thinking to relocate abroad. The foot-loose relocation behaviour of nomadic companies will inform policy makers in an early phase of policy planning that something might be sub-optimal in the location profile of a region or country if compared with locations abroad. The relocation behaviour of nomadic firms might give information about future developments in the volume and direction of transport flows, the transport modes used, and from this it may suggest the need for new infrastructure investments.

We will start with a preliminary survey of the literature on nomadic location behaviour of firms (Section 2) and continue with a macro-economic analysis of international capital and trade flows (Section 3), and a micro-economic survey of foreign companies in the Netherlands and Dutch firms with subsidiary companies abroad (Section 4 and 5). Next, the relationship between nomadic behaviour and infrastructure is further analyzed (Section 6). Finally, we end the paper with conclusions and policy strategies (Section 7).

2. Nomadic Firms in a Global Economy: a Literature Survey

In the literature, 'nomadic location behaviour' is not a generally accepted expression. However, many of the basic principles of nomadic location behaviour can be found in the globalization theory and other related theories. The most important reasons why firms move abroad with subsidiary companies are market expansions, (preferably in emerging markets), and costs reductions. World-wide deregulation and harmonization trends have simplified the possibilities of entering into new foreign markets. However, the firms are also confronted with foreign competitors on their own home markets. To survive in this international competition, firms must grow. Large firms are able to reduce the share of their R&D expenses per product by dividing them over larger product volumes (economies of scope). In addition to growth, a firm has to optimize its production process by cost reductions (economies of scale). The optimization of the production process generally leads to a relocation of activities over space. International firms reallocate their activities on a world-wide level of aggregation. In this relocation process, firms are restricted by source and market related activities. However, a number of activities are more or less foot-loose and can be done somewhere between the source and the market place. Those foot-loose activities are eligible candidates for nomadic location behaviour. Large costs reductions can be realized by outplacement of labour intensive production processes towards low wage countries such as Eastern Europe and Asia.

When considering market related activities, large cost reductions can be achieved by introducing large scale distribution networks like European Distribution Centres (EDC). These activities may also show nomadic location behaviour. To reduce the logistics costs, the geographical location within the European infrastructure networks will be of importance here.

Nomadic company activities will not settle down easily; those activities do not desire to become regionally embedded. As a consequence, regional investments will be kept low. This means that a company prefers to start a new subsidiary company instead of entering a market by a take-over or fusion. It would prefer to rent an accommodation rather than buy real estate. Finally, the company is unwilling to prepare its products for the demand of the specific local or regional market.

The literature survey states that an international relocation is 'nomadic' when:

- it is a temporary relocation;
- few durable investments are involved;
- there are clear cost reductions at stake in the relocation;
- the relocated activities are foot-loose;
- the company is not embedded in the local or regional economy;
- the company is part of an international network of companies producing for the international market.

To sum up, nomadic companies can be characterized as 'spatial opportunity seekers'.

To distinguish clearly between a nomadic relocation and other international relocations, the following typology of nomadic relocations has been developed:

Nomadic relocation	Other relocation
<ul style="list-style-type: none"> - foot-loose company - foot-loose activities - relocation abroad - creation of a new company - cost reductions - low capital investments - labour intensive production - production for international market - international network - international transport flows 	<ul style="list-style-type: none"> inert company - source and market related activities - local, regional or national relocation - take-over or fusion - penetration into emerging market - high capital investments - capital intensive production - production for local / regional market - local / regional network - local / regional transport flows

The characteristics of nomadic relocations can be categorized in a few strong mutually related aspects. The first aspect may be referred to as *foot-loose*. The freedom to relocate at any time can be suppressed by either large investments in real estate, education etc. (high sunk costs), or because the activity is not foot-loose by nature (source or market related). A second aspect can be organized around the notion of *regional embedding*. Nomadic companies try to prevent regional embedding not only by low capital investments - as mentioned above - but also by low juridical embedding. They prefer to start a new company instead of a take-over or fusion, both of which have larger legal consequences by a next relocation. The third aspect concerns *cost reductions*. In contrast to the desire to penetrate emerging markets, cost reduction is the decisive factor to relocate - some part of - the company. Labour intensive production processes are relocated towards low wage countries and the assembly of final products is concentrated in one particular location per continent. By these means standard products can be adjusted to continental standards (value added logistics in European Distribution Centres). And finally there is the aspect of the *international* dimension. The firm must be part of an international operating network of firms and producing for the international market.

A few problems arise from the implementation of the typology described above. First, there are a number of **unambiguous classes**. We already mentioned that a number of characteristics are mutually related. A more severe problem is that most characteristics are not pure contrasts as suggested in the typology. For instance, in the typology 'costs reductions' are placed opposite to 'emerging market'. In reality the relocation will be caused by a mixture of both factors. Although cost reductions will be the driving relocation factor for a nomadic company, that company will also respond to the advantages that emerging markets offer. In such cases the difference between a nomadic and a non-nomadic relocation will be expressed by the other characteristics. For example, a nomadic company locating in an emerging market would hardly invest in order to relocate within this emerging market if production circumstances elsewhere in this market become more favourable.

A second problem is **the order of succession** in the international relocation process. Often a company begins penetrating a market by hiring a local agent. After a number of sequential steps (outplacement of representative, starting a sales and/or distribution network), in a final step - part of the - production activities of the company are relocated. It seems reasonable to assume that nomadic companies will also use a similar strategy. It seems unrealistic however to expect that nomadic firms will spontaneously start a new company in a completely unfamiliar country.

3. Analysis of Trade and Capital Flows

The regions of origin and destination of the trade flows of the Netherlands are quite diverse, but, there is a general pattern for infrastructure demand. The trade flows with the whole of Europe (North, East, West, and South) are predominantly transported by lorries. For the Netherlands, this implies a demand for a good connection to the European road network. However, the trade flows with the other continents predominantly take place by sea shipping (low value goods) or aviation (high value goods). This implies a demand for an international sea harbour and airport.

Table 1 Import and export relations of the Netherlands, expressed as a percentage of the total value of the Netherlands

	West- Europe	East- Europe	Africa	North- America	Latin- America	Asia	Australia Oceania
1975	72,1	2,3	4,4	7,1	2,8	10,9	0,5
1977	71,3	2,1	4,9	6,7	2,6	12,0	0,4
1979	72,9	2,3	4,9	6,3	2,6	10,6	0,4
1981	70,4	3,0	4,9	6,9	2,7	11,7	0,4
1983	71,9	3,5	5,1	7,2	2,5	9,4	0,5
1985	73,5	3,0	4,2	7,3	2,7	8,7	0,5
1987	77,3	1,9	3,0	6,4	1,9	9,0	0,5
1989	76,9	2,0	2,6	7,2	1,9	8,9	0,5
1991	78,2	1,7	2,4	6,3	1,7	9,3	0,4
1993	75,4	2,4	2,1	6,4	2,1	11,1	0,4
1995	77,0	2,6	1,8	6,0	2,1	10,1	0,3

Expressed in the value of the traded goods, there is an increase of the share in the total value of trade of the flows between West-European countries and the Netherlands over recent decades (see Table 1). The conclusion that more

attention should be paid to the road network and less to the mainports of Rotterdam and Schiphol is too simple, however. The trade with other - West - European countries mainly concerns high-value consumer products, whereas trade with particular developing countries concerns low-value raw materials. The value of the trade does not tell much about the volume of the transport flows. The annual value of the Dutch international trade flow has increased from 175 billion to nearly 600 billion Dutch guilders over the period 1975-1995. These figures are given in current prices, but, the increase in fixed prices (i.e. corrected for inflation) remains considerable.

The development of the international inward and outward capital flow - foreign direct investments - shows to a large extent the same pattern in volume growth and spatial direction as described above for the trade flows. The flow of foreign direct investments towards low wage countries (like, for instance, developing countries), is relatively small and increasing at a low growth rate. Regarding the structural and substantial export surpluses it is no surprise that the Netherlands is a net exporter of capital.

Summarizing, it is shown that the share in trade and capital flows of the Netherlands with other European countries is by far the largest and increasing at a fast rate. There are no clear indications of a further integration of the Dutch economy with the American, Asean or East-European markets. However, inspired by the ideas of globalization, many research efforts on international firm relocations are focussed on the location of American, Japanese and Korean companies in the Netherlands. Instead of further investigations in this global field we plea for research on the relocation patterns of firms at the intra-European level.

4. The Empirical Data Base

In this section the selection of firms is given. Concerning firm relocation the country of origin of the firm and the country of destination might differ (see Table 2).

Table 2 Relocations by country of origin and destination

country of destination → ↓ origin of firms	The Netherlands	Abroad
Dutch companies	I	II
Foreign companies	III	IV

The first quadrant (I) concerns Dutch firms relocating within the Netherlands and is of no interest for the present research project. Moreover, much knowledge is already gathered on these intra-country relocations. The second and third quadrants are Dutch companies locating abroad and foreign firms locating in the Netherlands. Those relocations are not inevitably nomadic. It might be a single relocation, not necessary followed by other international relocations in a limited period of time. This restriction does not hold for quadrant VI, indicating foreign firms relocating out of the Netherlands again. However, in our research efforts we were able to trace only one company belonging to this quadrant.

To examine the impacts of the relocation of foreign companies into the Netherlands and Dutch companies abroad on transport flows and infrastructure demand, a number of companies has been interviewed and has offered much information by filling out a questionnaire. The following firms have been selected:

Foreign companies in the Netherlands

- 4 North American service sector companies
- 2 North American industrial companies
- 3 Japanese service sector companies
- 3 Japanese industrial companies

Dutch companies abroad

- 3 trade companies in Poland
 - 2 transport companies in Poland
 - 2 service sector companies in Poland
 - 1 service sector company in England (only interviewed by phone)
 - 1 service sector company in Ireland (only interviewed by phone)
-

All the selected companies have recently relocated (after 1990). The *foreign companies in the Netherlands* are service sector companies located in the central urban Randstad area and industrial firms in the area in the vicinity of the Randstad. They filled in a questionnaire in which they gave their opinions about the importance of 40 locational factors for their firm as well as the score for the Netherlands (in general) on those factors. The scores were given on a five-point scale for the time of location in the Netherlands and the present situation. The importance of some of the locational factors for the firms' activities might have changed since this location in the Netherlands. The same holds for the score of the Netherlands on those location factors. In the interviews the following items were researched: general company characteristics, the company network structure, location motives, development of transport flows (inward and outward), and the infrastructure use and demand of the company.

A Polish pilot study was conducted to analyze the impact of *Dutch firms* relocating *abroad*. Interviews were also held by phone with a foreign company

recently relocated from the Netherlands to England - a truly nomadic company - and a Dutch firm that had decided to relocate the majority of its activities to Ireland.

All Dutch companies in Poland are located in the Warsaw urban area. They filled in a questionnaire on the importance of 40 locational factors comparable to that which the foreign firms in the Netherlands had completed. The only difference is that they had to give the score of the Netherlands and Poland for those factors at the time of relocation. In the interviews the same items were at stake, but greater emphasis was laid on the changes in transport flows (volumes and directions related to the Netherlands) caused by the relocation to Poland.

5. Results of the Company Surveys

5.1 *Company structure*

Seven of the twelve foreign companies located in the Netherlands are the European headquarters. In Poland none of the researched companies is the European headquarters, however, the Dutch parent company is the European headquarters for six of the seven companies.

Company structure	foreign companies in the Netherlands	Dutch companies in Poland
European headquarters	7	0 (6)
European network	12	7
world-wide network	12	2
new company	11	7
rented premise	8	5

The network structure of all foreign companies is at least European, however, only two of the Dutch companies in Poland are part of a world-wide company network. In both surveys the companies are completely new subsidiary companies. Only one case concerns a take-over of an already existing company. Another common feature between the two surveys is the preference for rented premises. Only one quarter of the firms owns their accommodation. Those companies are either industries or transport companies. It seems that the more land extensive companies are those that own company real estate. The land intensive companies such as offices seem to prefer to rent.

Most relocations are apparently the result of an expansion of existing activities abroad. This does not mean that those activities have not continued in the country of origin. It is important to mention that both surveys show that only minor adjustments are made to adjust the product for the new market. Those

minor adjustments consist of regrouping, repacking, and adding directions for use in the correct languages.

A major difference between the two surveys is that foreign firms in the Netherlands have hardly changed their activities, whereas Dutch companies in Poland have extended their activities to a large extent. Foreign companies in the Netherlands have to serve a mature European market, whereas the emerging East-European market in transition offers many unexploited opportunities. The desire of many Dutch companies to have their own - Dutch - management available to them in Poland, seems greatly related to these new opportunities which might not be deemed effective enough by local managers.

5.2 *Transport systems and transport flows*

With regard to the transport flows and the use of transport systems, both surveys point in the same direction. Intercontinental transport flows are transported either by sea or by air. Distribution within Europe takes place by road, except for business travelling, special deliveries, high value products, and/or spare materials which are often transported by air. Rail and inland waterway infrastructure seem to be of marginal importance according to the surveys. However, one should remember that none of the surveyed companies generates flows of low-value bulk products; for such products rail, and inland waterway infrastructure are used.

There are, however, a number of differences between foreign companies located in the Netherlands and Dutch companies located in Poland. American and Japanese firms generate their own activities and trade flows, whereas Dutch companies in Poland are strongly linked to their Dutch parent company. American and Japanese companies develop their own trade flows for independent producers outside their network structure. The Dutch companies in Poland are dependent on good flows which are generated and directed by the parent company. The Dutch parent company collects all the inputs and distribute those goods to their subsidiary firms in Poland. This pattern of collection and distribution by the parent company can partially be explained by the company policy to keep stocks in Poland low because tax and customs rights must be paid immediately at the Polish border.

Another important difference between American and Japanese companies in the Netherlands and Dutch companies in Poland is that the market area of the first comprises all of Europe, whereas the market area of the latter is mainly in Poland and its neighbours. Only in the long-term do the Dutch companies intend to expand their activities by opening new subsidiary firms in, for instance, Russia. In general, it is difficult to attract and maintain the international operating firms into the Netherlands, since the market area exceeds the area of the Netherlands. The large consumer markets for those international operating firms are predominantly Germany, France and the United Kingdom. However, a number of companies stated that from a strategic point of view, it is an advantage to be located in a relatively small consumer market in Europe: none of the large consumer markets can claim that the company is located in their market; and even more important, none of the large consumer markets can complain that the

company is located in another large consumer market instead of their own home-market.

5.3 *Location motives*

In both case studies the main reason for the companies to relocate abroad is to expand their activities in an emerging market. All companies stated that both the expansion and the entrance into the new market have been successful; so there is little tendency to relocate the subsidiary firm anytime soon.

The entrance of companies into the Northwest European market is of a different magnitude compared to the entrance into the East European market. The Northwest European market is a developed, mature market near to the point of saturation, whereas the East European market is a young, undeveloped market in a phase of rapid transition. The particular advantages of the Polish market are the relatively stable economic and political climate. The Polish market is also a good frontier market for expanding into other East European markets.

The entrepreneurial demands concerning the location factors are rather diverse in the case studies. In Poland the entrepreneurs require a stable political, economic, financial - currency exchange - climate, and low wages. The underdeveloped infrastructure network, unfavourable customs facilities, legislation, etc. do not restrain Dutch companies from locating in Poland. With regard to a location in the Netherlands, the prerequisites of American and Japanese companies are much tighter. They indeed make their selections based on locational feasibilities like legislation, accessibility in all types of infrastructure networks, customs facilities offered, etc. When the Netherlands - no longer - fulfils all their requirements, these companies will decide relatively easily to relocate within Northwest Europe. The decision to relocate from the Netherlands to countries such as Belgium, Luxembourg, Germany, and even France and the United Kingdom, seems to be easier than the decision to relocate from Poland to a Baltic state, Russia, or the Ukraine.

6. **Nomadic Relocation and Infrastructure Policy**

The relationship between nomadic companies and transport infrastructure has two entrances. The supply side of infrastructure is of importance in attracting foreign firms to locate in a specific country. The infrastructure supply in the Netherlands is relatively good from a European point of view. More important, however, is the demand for the transport of goods. Foreign companies locating in the Netherlands will generate transport flows. The input and output flows of companies will pass through the Netherlands. This generation of transport flows by foreign companies located in the Netherlands will have impacts on the volume and the direction of the total transport flows and the use of transport modes in the Netherlands. The reversed effects will appear when companies relocate outside the Netherlands, for instance towards Eastern Europe or Asia. The transport flows might shift direction (more flows through the eastern part of

the country towards Eastern Europe, or more exports instead of imports in sea harbours), might change from the use of transport modes (road instead of inland shipping or rail), or might even bypass the Dutch area (goods are directly transported from the United States towards Poland without trans-shipment in the Netherlands). This all might lead to an under-utilization of the existing and/or planned Dutch infrastructure networks.

For the input and output of transport flows of international operating companies, the interregional and international infrastructure networks are of particular importance. One should not forget however, that for commuting, business services, and daily deliveries, the local - urban - infrastructure networks are of primary importance. Although the local infrastructure networks received no particular attention in the case studies, a number of Japanese and American companies stated that the accessibility of urban areas is of **utmost** importance for their decision to stay in the Netherlands. Metropolitan accessibility seems to be a critical location factor in the severely congested Randstad area.

6.1 Dutch infrastructure policy

The main target of the infrastructure policy of the Netherlands can be described in two sentences. Given certain environmental preconditions, the mainports Rotterdam and Amsterdam should be given opportunities to grow. Furthermore, there is a preferential policy concerning the main transport corridors from these mainports towards the hinterland. These corridors should be secured from congestion as much as possible.

This policy is in line with the demands of the Japanese and American companies located in the Netherlands. Their goods must be imported by the mainports and distributed throughout Europe by road. The combination of a sea harbour and an airport located nearby is especially seen as an important location factor. Apart from the Randstad, this combination of two ports of entry within Europe is found only in Belgium and Northern Germany. Nevertheless, the location of Japanese and American companies in the Netherlands is not secure; those companies constantly critical evaluate their geographical location within the Europe markets.

The trade flows of Dutch companies in Poland continue to be directed by the parent company in the Netherlands. The transport flows to Poland travel mainly by road, although the Polish road network is of poor quality. Only high-value goods are transported by air. The first impression is that this underlines the importance of good road transport corridors from the Netherlands towards Europe. However, the Dutch parent companies often extract their inputs from the world market. The distribution towards the subsidiary companies takes place afterwards by road.

Most firms intend to expand their activities in Eastern Europe in the near future. If the transport flows continue to be organized by parent companies, one might expect a rapid increase in the volume of the transport flows towards Eastern Europe, especially passing through the eastern area of the Netherlands.

We can conclude that both foreign companies in the Netherlands and Dutch firms abroad highlight the Dutch infrastructure policy, in which emphasis is laid

on mainports and their hinterland connections.

6.2 *European infrastructure policy*

The European infrastructure policy as developed by the European Commission can be summarized by an emphasis on the construction of Trans European Networks (TEN's) for road and high speed rail. Along with the TEN's, the European Commission supports deregulation in aviation and rail transport to increase the efficiency achieved in those networks.

Both case studies show the importance companies attach to the development of the European road network. Only to a minor extent is aviation used for European distribution of goods. The train and inland waterways play no important role. From a company perspective, in the short-term the further development of the road network seems to be of utmost importance. However, when deregulation in aviation leads to an abolition of, for example, tax free kerosine deliveries, in the longer term, high speed rail lines may become an interesting substitute for aviation for business travelling and the transport of high value goods, to give two possibilities.

In the case studies, no heavy industries were included, since they are not foot-loose. It is highly possible that for such industries, inland waterways and rail are important transport modes.

We may conclude that from a European perspective, the Netherlands should be well-connected to the Trans European Networks as induced by the European Commission. The Netherlands should try to secure its relatively accessible position within the European transport infrastructure networks.

7. **Conclusions and Policy Strategies**

It is well-known that companies are generally attached to two types of network infrastructure; 1) long-distance transport infrastructure (TEN's, rail roads, highways, aviation, inland waterways, and sea shipping) considering interregional and international transport, and 2) high-quality local/metropolitan infrastructure (light railway, hybrid railway systems, orbital motorways, parking facilities etc.) considering the daily distribution of commuting and service traffic. Both types of infrastructure improve the access to, and accessibility of, locations and are therefore important location factors for firms. The weights of those factors for firms differ depending on economic sector, economic activity, location, and market.

As a consequence, real foot-loose or nomadic companies scarcely exist. There will always be some kind of linkage to transport infrastructure. Relocation of activities is only desirable when the costs of a new location - in terms of infrastructure costs - are lower than at the old location. Next to this, the transition and sunk costs caused by the relocation might be large. In reality there will only be a small fraction of companies operating in a purely contestable market which might instigate a frequent relocation of company activities. The chance of finding nomadic companies that are both foot-loose and have negligible transition and

sunk costs is small. This means that even in an international economy, pure nomadism will probably not become a phenomenon of considerable magnitude, with regard to physical company relocations. However, a development that could be expected is a relocation in several phases. Firms open subsidiary companies which, over time, expand their activities and gain in economic importance. In the longer term this process will have the impact of a nomadic relocation, and can only be measured by a floating scale. Research on relocations should pay more attention to those incremental relocation processes. In other words, it is not the question of whether pure nomadism exists that is important, but rather to which extent - given a number of relocations of certain activities - there is a sign of nomadic tendencies.

Transport infrastructure is only an important determinant in the relocation decision and nomadism when it is seen in a synergetic relation with other location factors, such as quality of living, labour market, cost levels, etc. In some cases it seems that the quality of the transport infrastructure network is of decisive importance. However, the actual location decision is based on a set of locational factors which determine the optimal location. In a saturated competitive market, 'soft' location factors such as local image and local policy might be particularly important. It might be attractive in such a market to translate infrastructure advantages into economic psychological image locational factors.

It is important to understand that infrastructure contains more than roads and harbours. It concerns an integrated package of services offered by networks of several categories, which explains that a company at a certain location generates more benefits - or market opportunities - than a company at some other location would achieve. This implies that from the viewpoint of international operating companies the identification of weak links in the chain and bottlenecks in this integrated package of transport infrastructure services is of critical importance.

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